

Date: Sat, 17 Sep 94 04:30:20 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V94 #312  
To: Ham-Ant

Ham-Ant Digest                      Sat, 17 Sep 94                      Volume 94 : Issue 312

## Today's Topics:

(none)

- 2m vertical in my tree - how to?
- Coaxial into the House
- Common Mode Choke needed for 450 ohm open wire xmission line
- Discones as transmitting antennas
- Does SWR change...
- MW radio on my long wire antenna???
- Simple indoor SW antenna
- Sky Needle
- Summary - Half Square Antenna

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available (by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: 17 Sep 94 12:02:55 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: (none)  
To: ham-ant@ucsd.edu

faq

Date: 16 Sep 1994 16:52:09 -0700  
From: dog.ee.lbl.gov!overload.lbl.gov!dancer.ca.sandia.gov!cronkite.nersc.gov!  
fastrac.llnl.gov!usenet.ee.pdx.edu!news.reed.edu!gaia.ucs.orst.edu!osshe.edu!  
news.uoregon.edu!@ihnp4.ucsd.edu

Subject: 2m vertical in my tree - how to?  
To: ham-ant@ucsd.edu

In article <354gmu\$7t2@tequesta.gate.net>,  
Bob Bronson <optronic@gate.net> wrote:  
>The highest point of my lot is an oak tree. It is a good 20' higher than  
>my roof peak. Two reasons for considering placement in the tree are: 1)  
>homeowners assoc. prohibits antennas on roof, & in tree it will be  
>somewhat hidden. 2) it's there and higher already. Has anyone made tree  
>installations?

I've done lots of tree installations and most work great. Most of the trees were Evergreens, however. I think an Oak tree may be a tough one to climb to the top of, which is where you want your antenna. These kind of deciduous trees are better for shooting an arrow or slingshot over the top to get a line up there. Then hoist up a coaxial collinear antenna or maybe just a vertical suspended from the top. Don't strap antennas against the tree! Get some Cyclone fence top railing, radium shack antenna masting, electrical conduit, or whatever and mount the antenna on top of that stuff. Then strap the pipe to the tree. Sometimes I will use hose clamps to hold a hook on the side of the mast. This makes it easy to get up the tree by hooking onto branches while climbing and also may be used for the permanent hook onto a branch near the top. Try to keep leaves and branches away from the antenna as they will absorb somewhat when wet or in the Spring and Summer months when the tree is moist. During Winter most trees are dry inside while they are dormant and will not affect antennas much. I was just up to the top of one of my 70' Cedar trees the other day. The tree has grown another 4 feet in the last few years and has assimilated some of the ropes I had up there holding the mast on. The ropes are inside the tree now. I would never top any trees for antennas. It may make it a little easier to mount a rotor or something but your antenna tower will stop growing up and start growing out if topped. Side mount the rotor with straps and let it grow up.

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zardoz@ornews.intel.com WA7LDV "Each day is like a crisp new dollar bill.  
I speak only for myself. How will you spend it?" - Barnaby Jones

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Date: 16 Sep 94 20:57:10 CDT  
From: equalizer!timbuk.cray.com!walter.cray.com!renaissance!www@network.ucsd.edu

Subject: Coaxial into the House  
To: ham-ant@ucsd.edu

In article <40089.wosborne@nmsu.edu>, "William P. Osborne" <wosborne@nmsu.edu> writes:

|> >Rafael Solis (rafaels@zimmer.csufresno.edu) wrote:  
|> >: Well, I finally bought a 2 mt. external antenna which I already installed.  
I  
|> >: live in a fairly new house whose (outside) walls are covered with stucco  
|> >: (sp?). All windows have aluminum frames. Before I start drilling the  
stucco  
|> >: and/or the windows' frames I thought in asking to you'all about feeding  
|> >: coaxial through the walls and/or windows. Please send me a line or two.  
|>  
|> Easier way is to place a piece of wood or plastic on the window close the  
|> window on it with some weather strip around it then drill into the piece  
|> you just put in the window. When you move throw away the insert and close  
|> the window. Good Luck

A slight improvement to the above is to drill your coax-sized holes into the wood, then saw the wood in half - across the holes. Sort of like those old blocks they used to have in town squares to put drunks in. Then you can simply lay your feedlines across the holes, place the top half of the wood on, and close the window as far as you can. Use a dowel rod or length of wood to hold the window closed and safely in place. Some duct tape may be needed at appropriate spots to keep bugs out.

The advantages of splitting the wood is that you do not have to solder or cut off connectors when inserting or removing coax. Either that or the holes may be made coax-sized, rather than connector-sized. This technique works great for me and does not cause any permanent damage to structure or feed line.

Walt

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Walt Spector  
(www@renaissance.cray.com)  
Sunnyvale, California

"Today is the dawn of a new age,  
if only (click!)"  
The Biederbecke Affair

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Date: 15 Sep 1994 21:55:32 GMT  
From: news.tek.com!tekgp4.cse.tek.com!royle@uunet.uu.net  
Subject: Common Mode Choke needed for 450 ohm open wire xmission line  
To: ham-ant@ucsd.edu

If the impedance is high at the point you want to put a common-mode

choke (aka current balun or choke balun), you probably won't be able to make an effective choke. The problem is that the choke impedance has to be high relative to the feedpoint impedance, and this level of impedance is hard to accomplish. Other than a link-coupled tuner, the only solution I've seen is the method described by Al Roehm in the second ARRL Antenna Compendium. He put a common mode choke on the input side of the tuner. The problems with doing this are that the tuner case can end up at a very high and hazardous RF potential, and the tuner must be very well isolated from ground. Good luck!

73,  
Roy Lewallen, W7EL  
roy.lewallen@tek.com

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Date: 14 Sep 1994 17:40:03 GMT  
From: ihnp4.ucsd.edu!newshub.sdsu.edu!nic-nac.CSU.net!usc!howland.reston.ans.net!news.moneng.mei.com!sol.ctr.columbia.edu!news.oberlin.edu!ocvaxa.cc.oberlin.edu!PRUTH@network.ucsd.edu  
Subject: Discones as transmitting antennas  
To: ham-ant@ucsd.edu

Here are a few questions for discone users. I have a Radio Shack discone to which I've added a 49" vertical whip, since I've been told RS is in reality selling a 'topless' discone, unlike the Diamond discone which has the 'complete' discone with base-loaded vertical whip. I intend to transmit through this array with a 2M/70cm twin band HT, and would like to know:

1. What is the radiated pattern of the 'topless' discone, that is, how close to the horizon is it?
  2. Does the pattern change with frequency, and if so, how?
  3. Does having a vertical element affect this pattern?
  4. Should the vertical element be trimmed to work well on 2M/70cm?
  5. Would I be better off simply removing the vertical element?
- The ARRL antenna book has plans for a homemade discone, without vertical element, and this leads me to suspect the vertical element is for enhancing receive capability (for scanners) rather than having any role whatsoever in transmitting.

I would very much like to use the discone for now as my primary 2M/70cm transceiving antenna, as well as continue to use it as my scanner antenna. I've polled this newsgroup recently about the discone vertical-element question before, and now that Brett the Mesmerizer has shared his good results with his discone on 2M, I'd like to know from the

Discone Amateur Subculture how you like this bizarre little  
aerial? Thanks. --Bill KB8USZ

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Date: 16 Sep 1994 17:03:27 GMT  
From: darwin.sura.net!howland.reston.ans.net!math.ohio-state.edu!magnus.acs.ohio-  
state.edu!csn!col.hp.com!fc.hp.com!myers@seismo.css.gov  
Subject: Does SWR change...  
To: ham-ant@ucsd.edu

Cecil\_A\_Moore@ccm.ch.intel.com wrote:

> is a good suggestion, which was a new group named rec.radio.amateur.newbie  
> to which a newbie could post a "dumb" question without getting blasted by  
> the usenet "gurus". I admit to being the worst offender of "barbed"  
> responses but it sounds like a reasonable idea to me. Questions to rec.  
> radio.amateur.newbie would be considered seriously... unlike the responses  
> to my posting.

> What group would be appropriate for this discussion? .misc? .policy?

This isn't a bad idea! How about rec.radio.amateur.novice, a place where  
beginners and Elmers can get together?

Bob Myers KC0EW Hewlett-Packard Co. |Opinions expressed here are not  
Workstations Systems Div. |those of my employer or any other  
myers@fc.hp.com Fort Collins, Colorado |sentient life-form on this planet.

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Date: 12 Sep 94 17:04:05 +  
From: ihnp4.ucsd.edu!munnari.oz.au!jabaru.pronet.com!csource!unique!not-for-  
mail@network.ucsd.edu  
Subject: MW radio on my long wire antenna???  
To: ham-ant@ucsd.edu

-=> Quoting interso@cam.org to All <=MW radio on my long wire antenna???

G'day there.

in> Is this normal, if I receive some MW radio station on my 57 Ft long  
in> wire horizontal antenna?

in> If not, how I can made correction?

Depends on whether you live in a city area close to transmitters etc.

Friends & I here in Australia travel to remote locations around Oz & put out Beverage antennas (No not made of beer cans hi!) some of which are over 1500 metres in length.

As a rule, loop antennas are best for city/surburban use & longwires are best for rural areas. You may be lucky with your 57 foot horizontal but don't be surprised if it overloads the receiver.

Cheers

Dave.

... Life begins at 530 (kHz)

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FidoNet: Dave Onley 3:635/725

Internet: Dave.Onley@f725.n635.z3.fidonet.org

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Date: 15 Sep 1994 20:44:01 -0400

From: newstf01.cr1.aol.com!newsbf01.news.aol.com!not-for-mail@uunet.uu.net

Subject: Simple indoor SW antenna

To: ham-ant@ucsd.edu

Solder a \_metal\_ Slinky to a 20-25' roll of 18 to 22 ga wire from Radio Shack, and solder the other end of the wire to the appropriate connector for your receiver. Stretch the wire as far as possible around the baseboard in the room with your receiver, and hang the unconnected end of the Slinky at near-ceiling level.

This is a great antenna for SW and BCB broadcasts, working as well as an outdoor longwave.

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Date: 16 Sep 1994 22:36:04 -0400

From: newstf01.cr1.aol.com!newsbf01.news.aol.com!not-for-mail@uunet.uu.net

Subject: Sky Needle

To: ham-ant@ucsd.edu

Hi,

Does anyone know the price of "Sky Needle" antenna tower ?  
And please let me know how to contact to the dealer.

Thank you.

de JR1FVK

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Date: 16 Sep 94 21:21:04 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Summary - Half Square Antenna  
To: ham-ant@ucsd.edu

While the number of responses was small, some good comparative results was offered from those who have installed a half square antenna. From those that have used a half square, most if not all, feed the antenna in the top corner, as described in the recent CQ article.

The modeling I did using AO indicated that a good match can be obtained using 50 ohm coax cable. There was a difference between a gain optimized half square, and an SWR optimized half square. You give up about 1 dB to obtain the best match to 50 ohms. If you can live with 1.5 or 2:1 SWR, then you can get back most of the 1 dB.

As most people indicated, this is a low angle vertical radiator. As such, the quality of the ground will influence how well the antenna works. While this antenna does not require radials, ground conductivity will effect performance. Many of the people who have used this antenna have had the antenna fairly high, and not low to the ground. Modeling in AO suggests that some additional gain (relative when modeling against ground vs. free space) can be had if the antenna is elevated (more than a few feet).

The following are some results of the modeling I did, and how some antennas compare. The modeling I did was over Salt Water, for I will be at a beach front QTH. If you model the same antennas over average ground, the performance will be MUCH different. Also in my case, high supports will not be available. I suspect that 40' trees will be the maximum. So all antennas I modeled had a maximum height of 40' (except the existing 40m-2 yagi at 50'). This generally leads the choice of antennas towards verticals, or low antennas with vertical polarization. Remember, that a dipole shows gain when modeled over ground. Thus use the following gains figures as relative. Also I suggest reading Force 12's description on how they do thier gain calculations. Informative reading. Generally I modeled antennas weighted at 90% for gain, and 10% for SWR.

ANTENNA TYPE:	GAIN at 5 DEG ELEVATION ANGLE
40m Dipole @ 37'	-11.75 dBd (max rad @ 68 degs, + 4.99 dBd)
40m 2 ele yagi @ 50'	-3.82 dBd (max rad @ 36 degs, +8.91 dBd)
40m Loop @ 37'	+4.02 dBd
40m halfsquare @ 37'	+6.52 dBd

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Date: Fri, 16 Sep 1994 02:37:36 GMT  
From: psinntp!sunsvr6!jdc@uunet.uu.net  
To: ham-ant@ucsd.edu

References <352045\$197f@info2.rus.uni-stuttgart.de>,  
<3532dg\$fvm@nntpd.lkg.dec.com>, <356clg\$luj@info2.rus.uni-stuttgart.de>  
Subject : Re: 2 meters quad help

In article <356clg\$luj@info2.rus.uni-stuttgart.de>,  
<moritz@ipers1.e-technik.uni-stuttgart.de> wrote:

>Hi Todd,

>

>the extra "stacking" gain of a quad does not come in. Secondly it needs a 1:1  
>balun, which is much more difficult to implement than the 4:1 balun required

According to the ARRL Antenna Book, adding baluns to quagi's  
causes more problems than it solves. My 2-meter quagi works fine.  
It will soon be joined by a 440 quagi.

>...

>Then, gamma feeds and wooden antennas are not the first choice here, due to  
>climatic reasons.

It helps to varnish the wood. Wood is cheap, readily available  
and easy to work with. More importantly, it encourages people to  
get out there and build things.

A straight yagi with funky matching may be a little better for a  
given boom length. Big deal. Not many people will build one after  
pricing out the aluminum tubing. "That stuff costs \$\$\$ a foot!"  
I'll take pine furring strips, bronze brazing rods and house-wiring  
wire any day.

Of course big, expensive yagi's have their place in the grand scheme  
of things. But they generally aren't suitable first projects. Simple,  
cheap and effective projects get more people on the air. Once on the  
air they are ready for a higher performance, more complex "next" project.

73...Jim N2VNO

>73, Moritz DL5UH

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Date: (null)



From: (null)

While there is not much technical information on the feeding of the antenna (my original question) modeling and on the air performance indicates that the half square will work as shown when fed in the top corner. I would add that I would be careful on how the coax is lead away from the antenna. I would suggest the coax be removed in the same plane as the horizontal wire for as long as possible, to minimize any interaction.

I hope this was of interest. It sure seems like this antenna will play. CU in the pileups, Ken WM2C

ken.silverman@atlas.ccmail.airtouch.com

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Date: 14 Sep 1994 08:36:00 GMT

From: ucsnews!sol.ctr.columbia.edu!news.cs.columbia.edu!news.pipeline.com!  
malgudi.oar.net!swiss.ans.net!howland.reston.ans.net!EU.net!Germany.EU.net!  
news.dfn.de!news.belwue.@@ihnp4.ucsd.edu

To: ham-ant@ucsd.edu

References <34ncsu\$s9e@xap.xyplex.com>, <352045\$197f@info2.rus.uni-stuttgart.de>,  
<3532dg\$fvm@nntpd.lkg.dec.com>est  
Subject : Re: 2 meters quad help

Hi Todd,

Unfortunately the quagi does combine the disadvantages of the Yagi and the quad: (since both Yagi and quad are good antennas the quagi of course works too)

However, the gain of a quagi is determined by the director array, and hence the extra "stacking" gain of a quad does not come in. Secondly it needs a 1:1 balun, which is much more difficult to implement than the 4:1 balun required for the folded dipole. Please appreciate that even a 1KW 4:1 cable balun can be implemented on 2m with very simple metal work!

Sorry, but it is a frequent misconception, that a balun serves only academic purposes. It will not improve SWR, but omitting it will lead to severe degradation of beam directivity (may be not so significant in a two element quad, but everywhere above that it will be).

Yes, you are right in saying that many Yagi designs are complicated. The reason is, that the designers do not care to bring the feed point impedance to 50 Ohms in the first place, and hence require hair pin matchers and all sort of stuff to load the thing.

Besides, the optimum stacking distance of Yagis increases dramatically with the number of elements, therefore you will see only little of the 1dB advantage of a single ele quad over a dipole when going to a 4 ele quad as compared to a 4 ele Yagi.

Then, gamma feeds and wooden antennas are not the first choice here, due to climatic reasons.

73, Moritz DL5UH

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End of Ham-Ant Digest V94 #312

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